

THE CHEMIST

MARCH 1949



VOLUME XXVI No. 3

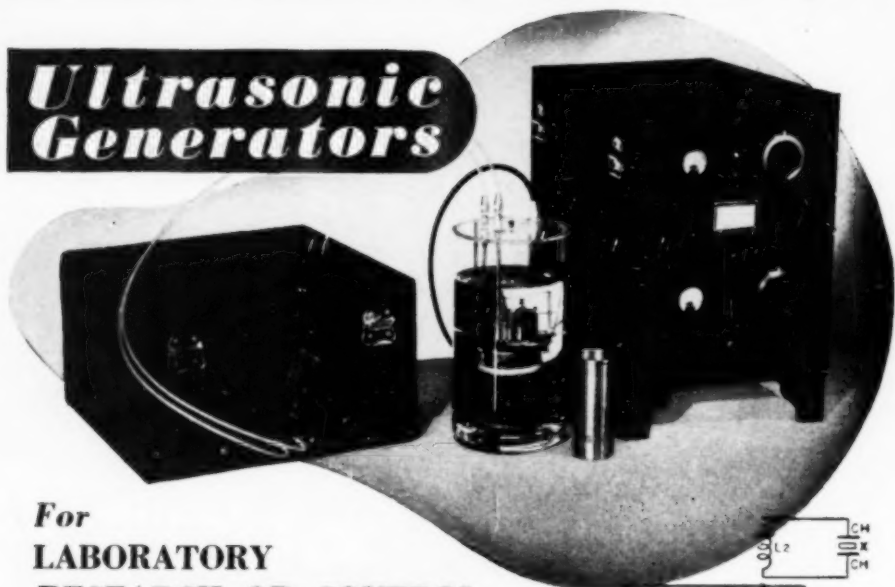


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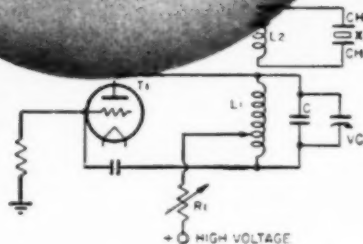
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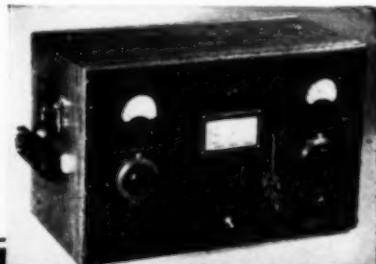
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The Chemist

Publication of

THE AMERICAN INSTITUTE OF CHEMISTS, INC.
60 East 42nd Street, New York 17, N. Y.

Volume XXVI

March 1949

Number 3

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Entered as second class matter April 8, 1936, at the Post Office at New York, N. Y., under Act of August 24, 1912. Issued monthly at 60 East 42nd Street, New York 17, N. Y. Subscription price, \$2.00 a year. Single copy, this issue \$0.25. Copyright 1949, by THE AMERICAN INSTITUTE OF CHEMISTS, INC.

SCHEDULED FOR FUTURE ISSUES

How Can A Chemist Increase His Value? By C. P. Neidig, F.A.I.C.

Industry Looks to Education. By Dr. Frank M. Surface.

Best Foot Forward. By Luella Canterbury

Manpower and Industry. By H. B. DeVinney

Manpower and the Universities. By Dr. B. D. Van Evera, F.A.I.C.

Vocational Guidance Conference—a Report

Has the Chemists' Professional Status Improved? A Survey

Other Material.

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Cover Picture

Dr. Martin Meyer, chairman of the New York Chapter, A.I.C., was born in St. Louis, Missouri, in 1899. He received the B.S. degree from the City College of New York, and the A.M. and Ph.D. degrees from Columbia University. After a long teaching career, he became and now is professor and chairman of the Department of Chemistry at Brooklyn College. He is also a consulting chemist and the author of several books and other publications.

During World War I, he was second lieutenant of Infantry, U.S.A. During World War II, he was administrator of the Air Warden Service of New York city and instructor in the U.S. Army's Biarritz American University in France. He lists membership in Phi Beta Kappa Associates among other affiliations.

New Directory Planned

A new Directory of the members of THE AMERICAN INSTITUTE OF CHEMISTS is in course of preparation. The names of members, their positions, business addresses, and mailing address if it differs from the business address, will be included. A card will be mailed to each member soon. To insure that your name, your position, and your firm are correctly listed in the new directory, please fill out the card and return it promptly.

It has been necessary for reasons of space to omit several regular departments from this issue of THE CHEMIST. They will be restored in April.

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National Council Meeting

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April 13, 1949, at The Chemists' Club,
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Professionalism

C. P. Neidig, F.A.I.C.

Councilor-at-Large

(One of a series of editorials being prepared by members of the Council of
THE AMERICAN INSTITUTE OF CHEMISTS.)

A GREAT many words have been written and spoken regarding professionalism and how the chemist may best attain professional stature. The doctor and the lawyer have been recognized as professional men for a long time. The fact that they serve the public directly probably accounts, to a large degree, for this recognition. The average chemist is employed by industry and may find it difficult, if not impossible, to reach the same professional plateau occupied by the doctors.

Recognizing this, we chemists should not give up hope but rather should search around for other perhaps more subtle methods to obtain a professional rating—that is, recognition by our fellow human beings. The doctor and the lawyer usually are active in the local Chamber of Commerce, Rotary Club, Elks, Lions, Eagles or other civic and fraternal organizations. Why are the chemists loath to join such groups? Is it because our time is taken up with technical meetings? If chemists would become interested in these social groups which, at the same time, are usually active in the local town affairs, it is reasonable to believe that

a real step toward professional status will have been taken.

The outside activity does not have to be directed toward an organization such as those mentioned. Yet the activity must be apart from technical interests, if chemists are to be recognized by others. Perhaps serving on Grand Juries may be of more interest to some, or working with the Boy Scouts, the Red Cross, and Community Chest drives, Church or Parent Teachers Associations. It matters not what the activity, so long as there is activity directed toward community affairs.

Participation by chemists in radio programs is a healthy stride toward the goal. Would not talks before local civic groups also be steps in the right direction? More active participation in local politics is certain to create more interest and understanding of chemists.

The intense technical training which has changed a young man of seventeen into a graduated chemist of twenty-one has perhaps had a deleterious effect on his over-all attitude. He is inclined to become completely absorbed in some problem where his analytically trained mind can work

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at top speed to solve a complex problem. Perhaps, if he were exposed to a little of the humanities, he would be more sociable in nature and would be more inclined to devote an evening a week to his community rather than to his technical problems. On the other hand, his technical education has trained him to think logically and clearly. These attributes will stand him in good stead in discussions of community problems and he will, in a relatively short time, become recognized as a man in the community whose opinions are needed before decisions are made.

Professional status is not conferred like a scientific degree or a medal. It is not the recognition of one man or a small group. It cannot be purchased by advertising, but it can be bought by hard work. The doctors have reached their present place, in the main, by unselfish attention to the needs of the community. This did not occur in a year or even ten years, but over generations. With the present so-called Atomic Age, we are accustomed to things moving rapidly. There is no doubt but that material things change rapidly, but is professional status a material thing capable of being measured? No, professional status will not come quickly to chemists even in the Atomic Age. And it will probably not come at all unless the average chemist, you and I, do something to earn it.

Dr. Crossley Awarded AIC Honorary Membership



Dr. Crossley receives certificate from President Flett

DR MOSES Leverock Crossley, F.A.I.C., a research director of American Cyanamid Company, was presented with Honorary membership in THE AMERICAN INSTITUTE OF CHEMISTS at a joint meeting of the North Jersey Section of the American Chemical Society and the New Jersey Chapter of the A.I.C., held February 14th, in the Public Service Auditorium, Newark, N.J.

Following a symposium on the role of phosphorus in the development of improved insecticides, plastics, and other materials, Dr. Crossley was introduced by August Merz, F.A.I.C., vice president of the Calco Chemical Division of American Cyanamid Company. Lawrence H. Flett, president, A.I.C., then presented Dr. Crossley with the Honorary membership certificate.

Introduction

August Merz, F.A.I.C.

Vice President, Calco Chemical Division of American Cyanamid Company

IT IS A particularly pleasant privilege to be permitted to present Moses Leverock Crossley to receive the award of Honorary membership in THE AMERICAN INSTITUTE OF CHEMISTS.

Fortunately, this is our friend's second appearance at this bar of justice. The first was on the occasion of the award to him of the Institute Medal in 1947. On that occasion there was rendered to the world of chemists a fairly complete account of his achievements in science, and to that record I would refer you, to refresh your memories. (See THE CHEMIST, June 1947.)

Now on his second appearance at this bar of justice when we are honoring ourselves in conferring on him an honorary membership in THE AMERICAN INSTITUTE OF CHEMISTS, I wish to emphasize a phase of his activity which was not stressed as it might have been on that earlier occasion.

His unflagging interest and effort in building up this organization should earn for him the deepest respect and gratitude of all chemists. It should be said that to a large degree his persistence kept the INSTITUTE alive in the days of its growing

pains. Numerous articles from his pen appeared in THE CHEMIST and in other scientific and technical journals. These, always clear and concise, dealt with the problems of the profession. In his first presidential address in 1924, he formulated the objectives of the INSTITUTE and these were incorporated practically intact in the constitution.

Crossley is an outstanding teacher and an ardent exponent of freedom in the practice of research. His patience in listening to the other man's suggestions has won for him the love and admiration of his associates and co-workers. For one so successful in research, his modesty is astounding. To appreciate this you have only to read the opening sentences of his medal address:

"There is nothing miraculous about research. It is a systematic search for facts, which when evaluated help to answer the ordinary questions of What, How and Why."

That he does not approve of wild-catting in his championship of freedom in research is clearly shown in his paper on "Research Requires an Organized Plan" in the January 1948, issue of THE CHEMIST. Here again his opening sentences, "Research

INTRODUCTION

is organized effort and requires planning. Random experimentation wastes time, energy, and material; besides it fosters mental inertia," express his recognition of the economics of research.

On the personal side, his hobbies are reading, writing, and sailing. This may not be in their proper order. But as to sailing, experience has taught him the usefulness of an auxiliary motor which, however, is never

used while there is even a whisper of a wind. His love of the sea stems from a grandfather who was a New England sea captain. This he passes on to his most recent hobby, two grandchildren who are receiving strict instruction in how to act on a boat.

I present Moses Leverock Crossley to receive the honor he so well deserves.

Presentation

Lawrence H. Flett,

President, A.I.C.

DR. CROSSLEY is well known to you as one of the country's outstanding professional leaders. He is a well known educator and an internationally famous biochemist. He has long been a successful industrial chemist.

THE AMERICAN INSTITUTE OF CHEMISTS has honored Dr. Crossley many times. He has been the president of the INSTITUTE twice, once in 1924 and again in 1934. He served for long periods on the Advisory Council. He has been presented with the Gold Medal of THE AMERICAN INSTITUTE OF CHEMISTS which is the highest honor the INSTITUTE has to bestow. He has indeed had every honor which it is possible for the INSTITUTE to give him, except for that of Honorary Membership which is being presented to him tonight.

In his work for the INSTITUTE, Dr. Crossley has steadfastly and successfully striven to raise professional standards. He has an unswerving belief in the duty of every chemist to his fellow chemist, to his school, to his community and to his profession. In these things he has a sincerity of purpose which is without parallel. In my acquaintance with him I have never met a man so honestly, so wholeheartedly and so unselfishly devoted to raising the standards of chemical education and of the chemical profession.

There is nothing the INSTITUTE can do which can add much to the great reputation which Dr. Crossley has so nobly carved for himself. We can hope that he will take pleasure in this award because it represents appreciation by his fellow chemists.

It is a sincere recognition from friends.

Moses Leverock Crossley, Fellow of THE AMERICAN INSTITUTE OF CHEMISTS, it is a privilege to be able to pass to you the certificate which permits you to be known as an Honorary Member of THE AMERICAN INSTITUTE OF CHEMISTS, and to add your name to the distinguished list of honorary members of THE AMERICAN INSTITUTE OF CHEMISTS.

Today's Marketing Methods

Lawrence H. Flett, President, A.I.C., speaking at the meeting of the Chemical Markets Research Association and the Polytechnic Institute of Brooklyn, February 10th, stated that synthetic detergents introduced only nineteen years ago have shown a market development more rapid than any ever achieved in the past. Synthetic resins, for instance, valuable as they are, have not shown the same production advances in fifty years as the synthetic detergents have in nineteen years. This result, he said, reflects today's better marketing methods.

Dr. Lloyd A. Hall, F.A.I.C., technical director, The Griffith Laboratories, Chicago, Illinois, gave an address to Sigma Xi Initiation ceremonies at the University of Illinois, Urbana, January 10th, on "The Contribution of Scientists to Social Progress."

Annual Meeting 1949

The 1949 Annual Meeting of THE AMERICAN INSTITUTE OF CHEMISTS will be held in Chicago, Illinois, at the Edgewater Beach Hotel, May 6th and 7th, under the auspices of the Chicago Chapter, A.I.C., Dr. Vandever Voorhees, F.A.I.C., of the Standard Oil Company of Indiana, 910 South Michigan Avenue, Chicago 4, Illinois, is general chairman of the Committee on Arrangements.

The program will include several papers on the professional and economic status of chemists as prepared for the Committee on Professional and Economic Status of the Chicago Chapter, in addition to other features. The Gold Medal of the INSTITUTE will be presented to Dr. Warren K. Lewis of Massachusetts Institute of Technology.

The complete program will appear in the April issue of THE CHEMIST. A.I.C. members are urged to make their plans now to attend this meeting.

Cancer Fund

A fund of \$1,500,000 for cancer research was presented to the Alfred P. Sloan Foundation, Inc., by General Motors' automobile dealers throughout the United States.

Salary Trends of Chemists

Dr. C. L. Brown, F.A.I.C.

Assistant Manager, Research and Development Department, Standard Oil Development Company, Bayonne, N.J.

A paper presented at a recent meeting of the New Jersey Chapter, A.I.C.

MOST chemists have a natural interest in comparing their earnings with those of other members of the chemical profession and with those of people in other occupations. Since the last comparative studies of this type were based on the salaries of American Chemical Society members in 1943 and prior years, it seemed of interest to make estimates of the salary levels during 1944 to 1947, to examine the trends displayed between 1926 and 1947, and to compare chemists' earnings with average earnings in some industrial occupations.

General observations, based on the American Chemical Society studies of chemists' salary data from 1926 to 1943, also of industrial group earnings between 1929 and 1943, together with the present extension to 1947, are summarized as follows:

1. The median salary of starting chemists increased by 100% from 1926 to 1947, while the 20-year chemist's salary increased by 26% over the same period. In buying power, the starting chemist in 1947 had 62% more than in 1926, while

a 20-year chemist received about 1% more. Allowance for income tax payments would decrease the diminishing differential between starting and 20-year chemists at a greater rate.

2. The large relative gain by the starting chemists appears due to their lower salary levels since a similar phenomenon has apparently occurred throughout the earning population, with the lower paid groups markedly increasing in purchasing power and the higher paid groups receiving relatively less increase.

3. Annual salary increases, in percentage figures, have obviously diminished within recent years since the differential salaries between increasing experience levels have markedly diminished in percentage values. In 1926 the median salary for twenty years experience was 220% above that of a starting chemist; in 1947 it is estimated to be 100% greater.

4. Significant differentials obviously continue to exist between maximum and minimum salaries within given experience levels. However, differentials between top 10% and

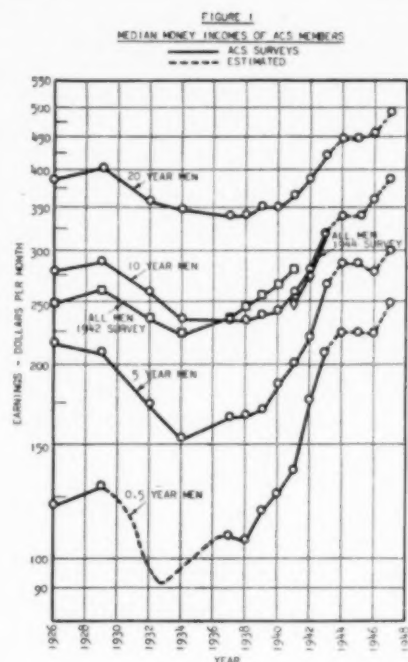
bottom 10% salaries, in percentage of the median, have been diminishing.

5. Salaries received by ACS members of 0.5 and 5 years experience from 1929 through 1947 changed in patterns closely following those for workers in industrial occupations generally. Data from industry appear to be unavailable for comparison with the change in earning studies of chemists in the higher earnings brackets, i.e., 10 and 20 years service, but a general knowledge of the changes in salary and wage levels which occurred would lead to the deduction that the income of chemists in the higher earnings ranges followed the same patterns as those of comparable earnings levels in most other occupations.

6. Salary and wage compensation took an increased share of the national income in 1947 as compared with 1929, as did also unincorporated businesses including farming. Interest payments and rental incomes took a markedly smaller portion, and corporate profits after taxes and inventory evaluation adjustment represented a considerably lower portion.

Material Used in This Study

As mentioned, the present article has started with studies on earnings of American Chemical Society members made by the American Chemical Society for the period ending 1943. These studies comprised salary surveys in 1942 and 1944 by the Committee on Professional and Economic



Status and a comparison between earnings of ACS members and average earnings in some industrial occupations made by R. W. French in 1945. These studies were presented in *Chemical and Engineering News* in 1942, 1944, and 1945. Figure 1 is essentially the duplicate of a chart appearing in the article by R. W. French. Median salaries for ACS members of 0.5, 5, 10 and 20 years experience are shown for each year between 1926 and 1947. Income data from 1944 to 1947 have been estimated. The salary data presented on Figure 1 are, except those for "All Men—1942 Survey," monthly salar-

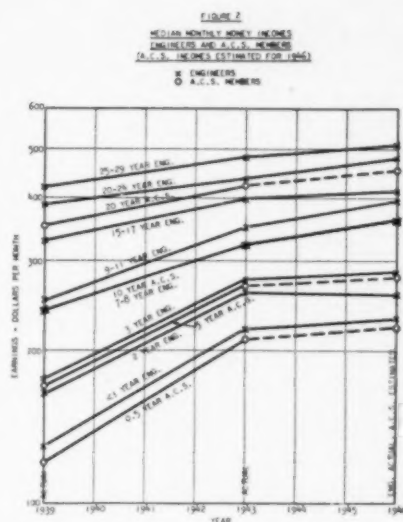
SALARY TRENDS OF CHEMISTS

ies including overtime payments but excluding fees and bonuses. The ACS surveys indicate that inclusion of fees, bonuses and possibly other employer allotments has little effect on salaries in the \$160-\$200 range, but adds about 5% in the \$250-\$320 range and as much as 20% in the \$525-\$600 range.

In extrapolating the ACS salary curves to 1947 levels, salaries were first estimated for 1946 by use of the report issued in 1947 by the Engineers Joint Council on the earnings of engineers. Data were available in that report for the incomes of engineers for 1939, 1943 and 1946. The incomes of ACS members for the 0.5-year experience level and 5-year, 10-year and 20-year experience levels were plotted for 1939 and 1943. Income data for 1939, 1943 and 1946 were then taken from the Engineers Joint Council report for the experience groups which most closely approached the earnings for the ACS members of the experience groups mentioned. By a graphical comparison of the earnings of the ACS members in 1939 and 1943, and those of the engineers in 1939, 1943 and 1946, income levels were estimated for the ACS members for 1946. Figure 2 shows the graphical presentation for estimating the income levels of ACS members in 1946.

Engineers' Salaries

In passing, comment should be made on the indication that engineers

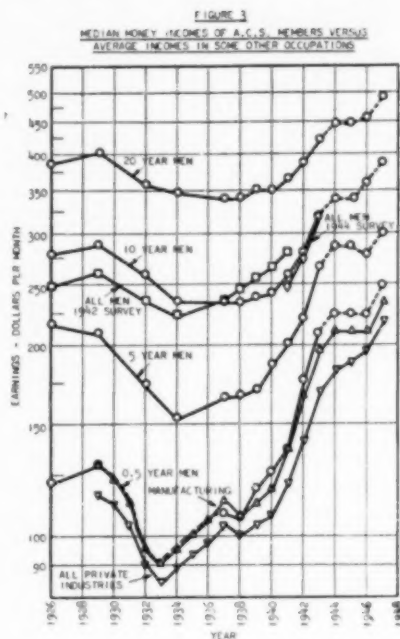


of about 2.5 years experience receive salaries comparable to those of ACS members at a 5-year experience level and that engineers of 7-8 years experience received the same salaries as were received by 10-year ACS members. Also, starting salaries for the engineers are indicated as being about \$10 per month higher than those for starting ACS members. Salary data in the Engineers Joint Council report were obtained through questionnaires to members of six professional engineering societies. It is believed that the qualifications for membership in the professional engineering societies have resulted in selection with respect to earnings level from all those engaged in engineering work, particularly from those with less than 20 years of experience.

The median salary of the group surveyed might, for example, represent the salary found at a 25-40% level of all employed engineers at the experience levels discussed. Assuming that there may be some selection of this type, it is of interest to note that in 1943 the 25% level of ACS starting salaries was \$231 per month (vs. \$209 for the median or 50% point) as compared with the median of \$218 per month for the engineer of less than one year experience. The salary of ACS members of 2.5 years experience at the 25% level was \$265, as compared with a calculated (from 2-year and 3-year medians) median salary of engineers of \$267 per month. The salary (interpolated) of ACS members of 7-8 years at the 25% level in 1943 was \$343 as compared with the engineers' median salary of \$327 at 7-8 years. By selecting chemists with earnings above the lower range in a given experience level, median salaries could be obtained from such a group which would equal the medians of engineers of the same experience.

Salaries in Manufacturing

With 1946 salaries for ACS members estimated as outlined above, the income levels of the starting chemists for 1944 and 1945 were determined from a correlation between the salaries of starting chemists and the average salaries and wages paid in manufacturing industries in the U.S. (*Survey of Current Business*, U. S.



Department of Commerce.) Reasonably good correlation between the average salaries and wages in manufacturing with the median income of starting chemists was observed through the period from 1937 to 1943 (Figure 3.) The average monthly earnings in manufacturing increased by 7.1% from 1943 to 1944; hence, the median salary of a starting chemist in 1944 was assumed to be 7.1% above the figure in 1943. Average monthly earnings in manufacturing showed negligible change between 1944 and 1945. The median salary for starting chemists was therefore assumed to be the same in 1945 as in 1944.

SALARY TRENDS OF CHEMISTS

Estimates for the median salaries for chemists of 5 years experience in 1944 and 1945 were made by reference to the change in earnings of an occupational group listed as "Engineering and Professional Services" in the earnings reports in *Survey of Current Business*. Reasonably good correlation existed between the earnings of this group and those of 5-year chemists from 1938 to 1943 (Figure 7.) Earnings by the former rose by 5.7% from 1943 to 1944. Salaries for 5-year chemists in 1943 were therefore increased by this percentage to give a 1944 figure. A very small income increase (about 1%) was realized by the "Engineering and Professional Services" in 1944 and this has been applied to give a 5-year chemist's estimated salary for 1944.

Salary estimates for chemists of the 10 and 20-year experience level were made on a somewhat arbitrary basis for 1944 and 1945. The 5.7% salary increase assumed for 5-year chemists was applied to the 1943 salaries in the 10 and 20-year groups to obtain 1944 figures and an increase of 1% was used to convert 1944 to 1945 salary figures.

An estimate for the median salary in 1947 for the 0.5 experience level was obtained by application of the 11.3% increase observed in the earnings in "Manufacturing" between 1946 and 1947 to the 1946 earnings for a starting chemist. The 1946 median salaries for the 5-, 10-and

20-year were increased by an arbitrary 9% to obtain 1947 salary figures on the basis that the 11.3% for "Manufacturing" might be unduly high for the salary ranges of the 5-, 10- and 20-year chemists. "Engineering and Professional Services" experienced a gain of 8.3% from 1946 to 1947 but this appears low in comparison with most of the industrial occupations.)

Results Charted

As mentioned, the results of these estimated extrapolations appear on Figure 1 as an extension of the curves in the article by French. (The interpolated income curve for the half-year men from 1929 to 1936 has been altered somewhat over that appearing in the French article in order to conform better to the average earnings in "Manufacturing.") The median monthly incomes of ACS members at various experience levels are shown for the period 1926-1947. It is seen, for example, that the median starting salary was \$121 per month in 1926 and \$247 in 1947; the figure doubled over the period. It is also seen that the median salary of ACS members of 5 years experience in 1926 was \$215 per month, in 1940 was \$187 and in 1947, about \$306. Salaries increased by about 50% in this earning bracket. The salaries of 10-year chemists increased from \$278 to \$389 from 1926 to 1947, or 40%, and those of 20-year chemists from \$388 to \$491 or 26%.

Assuming that the salary differentials between experience groups for 1926 had been perpetuated, then a starting chemist would have advanced by \$267 (i.e. from \$121 to \$388 per month) in salary or an average salary increase of \$13 per year to an experience level of 20 years. Assuming 1947 differentials to be perpetuated, then the salary change from starting to 20 years experience is \$244. However, the salary change on the 1926 basis amounted to 20 increases of 11% per year, based on the median starting salary of \$121 in 1926, but on a 1947 starting basis, would amount to 20 increases of only 5% per year, based on a median starting salary of \$247 per month. As late as 1938, the increase from starting salary to 20-year experience salary resulted in the possibility of an increase of 11% per year on a starting salary of \$107 per month. It is obvious that if the 1947 differentials for experience are continued, then the salary increases to be expected will be of the magnitude of 5% per year. It is also obvious that, on a compounded percentage basis, the average salary increase per year on each increased salary will average less than 5% over a twenty-year period.

Median Salaries

The median salaries for *all* ACS members reporting in the 1942 survey are shown on Fig. 1, as well as the median salary obtained in the

1944 survey. The median salary in 1944 appears to be lower than that obtained in the 1942 survey. Part of the difference lies in the different bases for the two sets of salary data. Monthly incomes for the 1942 survey medians for all chemists were taken from the annual earnings data in distinction to all other data presented herein, including the medians for all chemists in the 1944 survey, which are based on monthly salaries. Annual incomes at the salary level of the median for all chemists indicated about \$10 more per month than given by monthly salaries. About half the difference in the 1942 and 1944 median salaries is accounted for by this difference in basis. The remainder of the difference is probably due to some reduction in median age of the ACS membership between 1941 and 1943.

Since only the median incomes are shown for the various experience levels, it should be mentioned that significant differentials exist between the top and bottom salary in each experience level. For example, in 1926, with a median salary of \$121, the salary for 10% of the starting chemists was above \$179, while the 10% receiving the lowest salaries were in a range considerably below \$100 per month. In the 5-year experience range, 10% received \$321 per month or more and 10% received \$115 per month or less. In the 20-year group, 10% received \$860 per

SALARY TRENDS OF CHEMISTS

month or more and 10% obtained \$223 per month or less. In 1943 the differential between top 10% and bottom 10% amounted to \$86 for starting chemists, about \$150 at the five-year level, and about \$500 at the 20-year level. Salary differentials between the top and bottom 10% showed a decrease in 1943 over 1926 in the lower experience levels. When expressed in terms of percentage of the median, the decrease in differentials is quite marked. Similar reduction in differentials, as a percentage of the medians, between top and bottom 10% is also to be observed between 1939 and 1946 in the data on engineers' salaries reported by the Engineers Joint Council.

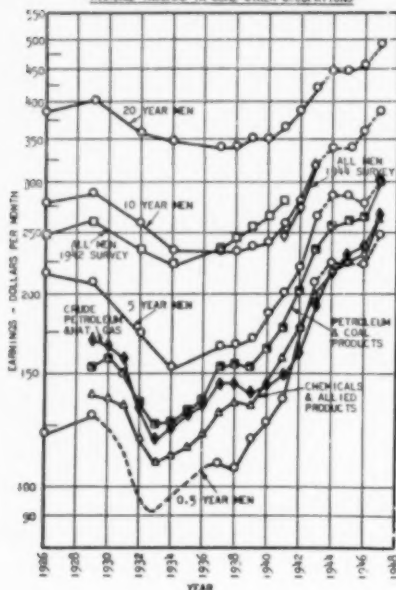
The comparisons made by the article by Dr. French between the salaries of ACS members and the earnings in various industrial occupation groups has been extended through the period of 1944 to 1947. Figure 3 compares the median monthly salaries of ACS members for four experience levels with the average earnings in "Manufacturing" and in "All Private Industry." It should be particularly noted that the salary data for ACS members are displayed as median earnings and the industrial earnings as *average* earnings. Generally speaking, median salary figures are below the average values in series which have differentials between maximum and minimum earnings figures. However, the average salary is be-

lieved to closely approach the median salary in the case of 0.5-year and 5 year men; the average of top 10% and bottom 10% salary figures are little higher than the 50% or median salary figures for 0.5-year and 5-year men, lending support to this opinion. Averages of top 10% and bottom 10% significantly exceed the median salary for the 10-year men and, to a greater degree, for the 20-year men. Any comparison between the median incomes of the 10 and 20-year men and average incomes of another group should bear the qualification that average incomes of these two groups are above the medians.

Full-time Employment

The average earnings included within Manufacturing and All Private Industries include all salaries and wage payments from president to messenger boy, including, of course, chemists. The data are corrected to the basis of "full-time equivalent employees," i.e., man-years of full-time employment plus the equivalent in work performed by part-time employees. The average compensation figure for All Private Industries comprised the average income for 38,000,000 equivalent full-time employees in 1944 and 40,000,000 employees in 1947. The same average income applies quite closely for all equivalent full-time employees in all industries including all government employment, or a total of 55 million workers in 1944 and 47 million in

FIGURE 4
MEDIAN MONEY INCOMES OF A.C.S. MEMBERS VERSUS
AVERAGE INCOMES IN SOME OTHER OCCUPATIONS

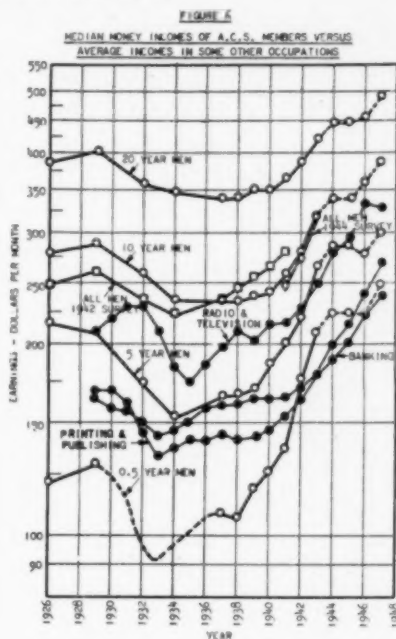
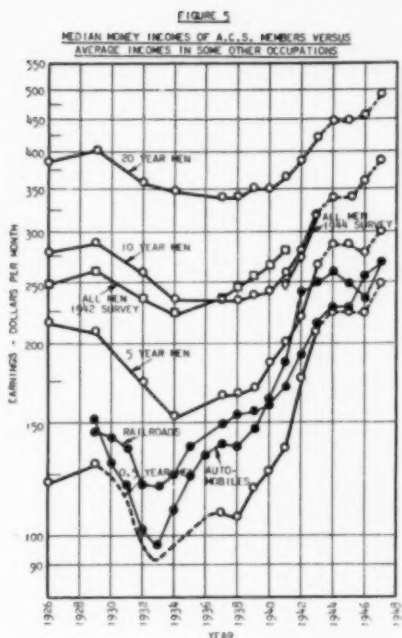


1947. The full-time employees in Manufacturing numbered 17 million in 1944 and 15 million in 1947. It is somewhat surprising that, as shown by Fig. 3, the newly employed ACS member at 23 years of age (as determined by the ACS surveys) receives a higher income than the average employee in manufacturing or all private industry plus all government employment at an age of perhaps 37 to 38. It is also of particular interest to note the parallel character of the curves for the starting chemist and the two industrial groups through the years.

Comparison of Earnings

Figure 4 shows the average earnings in some industrial occupations allied with the work of ACS members. Average earnings in Crude Petroleum and Natural Gas, in Petroleum and Coal Products, and the Chemical and Allied Products are shown. The average income by all workers in these occupations is shown to be below the median salaries of chemists with five years experience. The median salaries of starting chemists were below the three groups until 1943, then exceeded the average incomes of two of the groups, then returned to an inferior position in 1946 and 1947. It is interesting that the curves for the three industrial occupations and the 0.5-year chemist follow the same general pattern through the years, although there is some crossing and recrossing of the curves. Fig. 5 demonstrates about the same general relationships with "Automobiles" and "Railroads" as were shown in Fig. 4 for three other groups. A large relative gain was made, however, by "Automobiles" during the war. As may be noted, the chemists with 5 years experience are shown to have higher earnings than the average employee in the automobile production industry and of the railroads. Fig. 6 shows the average salary and wage paid in Printing and Publishing, Banking, and Radio and Television. The salary curves for the first two groups indi-

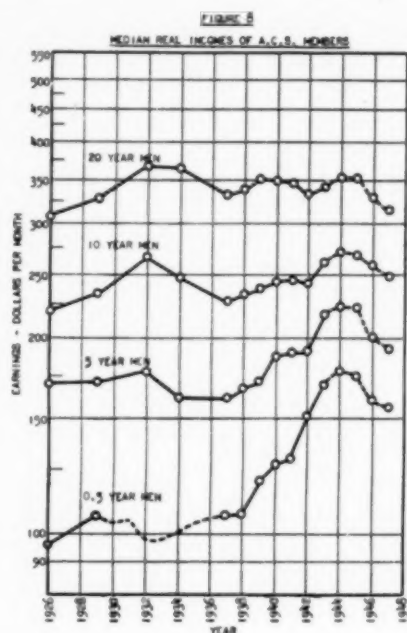
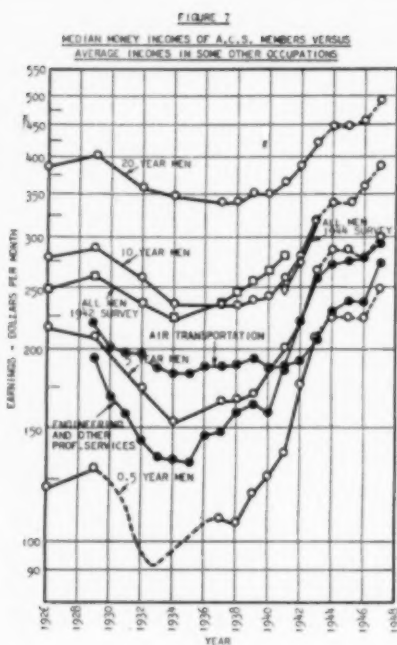
SALARY TRENDS OF CHEMISTS



cate less increase than was given in industry generally from, possibly, 1938 to 1943, and the members of these two groups lost considerable ground during this period when compared with chemists of 0.5-year experience and 5 years experience. Some recovery in position was obtained between 1945 and 1947. Workers in the Radio and Television industry also lost position relative to the chemists of the 5 and 10-year experience level, but regained this in 1945-1947.

Figure 7 shows the average earnings for employees in Engineering and Other Professional Services and in the Air Transport industry. The term "Engineering and Other Pro-

fessional Services" apparently includes employees in engineering and construction firms and their earnings should consequently bear some relationship to the incomes of ACS members because technically trained persons probably comprise a goodly proportion of the employees. In general, the average wage and salary in Engineering and Other Professional Services has followed the trend of the salaries of the 5-year chemists. The average salary and wage in Air Transport failed to follow the general increase trend starting in 1940, and the workers in this occupation have lost considerable ground when compared with starting chemists and with



chemists of five years experience. Considerable recovery was made in 1947.

Purchasing Power

Previous data have been shown on a dollar income basis. As is known, purchasing power has shown considerable variation during the period 1926 through 1947. The incomes of the ACS members in dollar values have therefore been converted to real incomes by dividing by the cost of living index for each year from 1926 to 1947. Figure 8 shows the incomes in purchasing power of ACS members of four levels of experience. It will be observed that the chemists of 20 years experience have shown nothing like the significant increase in pur-

chasing power received by the starting chemists. The chemists of 20 years experience, for example, had real incomes of \$307 in 1926 and \$309 in 1947, or a negligible change as compared with \$96 and \$156, respectively, for the half-year chemists or an increase of 62%. The negligible increase in purchasing power between 1926 and 1947 for the older chemist is, however, apparently not to be associated with length of experience but is more likely associated with the higher earnings level. It may be also assumed that the \$307 of purchasing power paid to a chemist of 5 or 10-years experience in 1926 would be an income of \$309

SALARY TRENDS OF CHEMISTS

FIGURE 9

MEDIAN REAL INCOMES OF A.C.S. MEMBERS VERSUS
AVERAGE REAL INCOMES IN SOME OTHER OCCUPATIONS

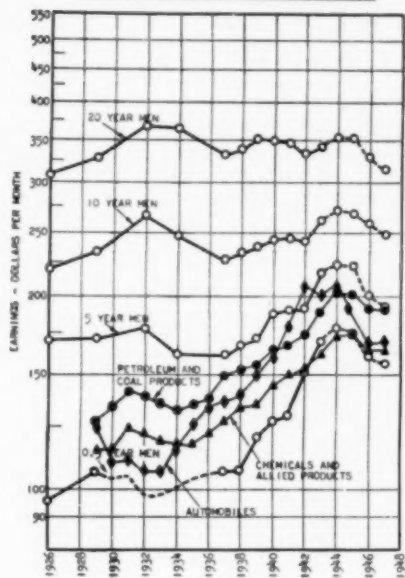
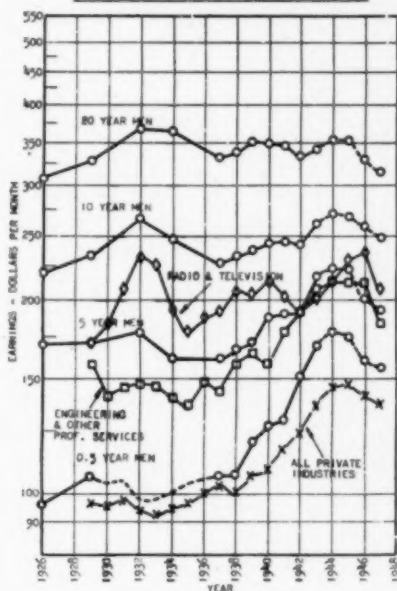


FIGURE 10

MEDIAN REAL INCOMES OF A.C.S. MEMBERS VERSUS
AVERAGE REAL INCOMES IN SOME OTHER OCCUPATIONS



for similar capacity in 1947. It is believed that this general lowering of salary expectations in the higher salary group and the increase in expectations by members of the lower earnings brackets is true for the wage and salary earning population at large.

Average Real Earnings

Curves for the changes in average real earnings in some industrial occupational groups are shown on Figures 9 and 10. The average real earning in All Private Industries increased from \$96 per month in 1929 to \$137 in 1947 or about 43%. The average earnings of the other occupational groups of Figures 9 and 10 were

above those of All Private Industries in 1929 and consequently, as might be expected, the gain in purchasing power has been less.

Another factor to be mentioned is that of adjustment of these incomes for income tax payments. A cursory examination was made of this factor on 1926 and 1947 median salaries of the 0.5 and 20-year experience groups. The assumption was made that the 0.5-year chemist was unmarried and that the 20-year chemist was married and had two children. In 1926 the median salaries were \$121 and \$388 per month, respectively, and under Federal income tax exemptions of that year, no tax would

be paid on the median salary of either group. In 1947 the respective median salaries were \$247 and \$491. Federal income taxes amounted to \$35 and \$57 per month, respectively, resulting in net salaries of \$213 and \$434. The *money* incomes in net figures were converted to *real* incomes for 1926 and 1947 and resulted in \$96 and \$307, respectively for 1926 and \$134 and \$273 for 1947. Between 1926 and 1947 the starting chemists show a gain of about 40% and the 20-year chemists, a loss of 11% in purchasing power, on these modified earnings values.

National Income

The incomes of chemists are derived largely from their salaries and, as such, they are part of and depend on the total wage and salary payments embodied in the national income. It is of interest to examine the components of the national income between 1929 and 1947. This has been done in *Survey of Current Business* for December 1947. Compensation of employees amounted to 56.1% of the national income in 1929, 59.5% in 1940 and 59.4% in 1947, i.e., some gain between 1926 and 1947. Farm income amounted to 7.3, 7.1 and 10.1% with a significant increase from 1940 to 1947. Rental income and net interest amounted to 13.1, 9.6 and 5.2% or a very large drop between 1929 and 1947. Corporate profits after inventory evaluation adjustments and after taxes (not

shown directly in the study mentioned but readily calculated) amounted to 10.3, 7.7 and 6.4%. Incomes of unincorporated businesses and professional business men, excluding farm ownership, amounted to 10.6, 11.0 and 12.3%. The general changes between 1929 and 1947, then, have been some increase in the share to wages and salaries, increases to unincorporated enterprises including farmers, a significant drop in rental and interest payments and a marked drop in corporate profits after taxes and inventory evaluation adjustment.

Summary

The general conclusions from the information herein have been stated earlier in some detail. In summary, it appears that in 1947 chemists of the longer experience or higher earnings brackets received earnings which are about the same in purchasing power as those received in 1926, while starting chemists or those in the lower income brackets had purchasing power much greater than that in 1926. Similar conditions are believed to apply throughout the salary and wage groups of the population in general. The salaries of chemists have, in general, followed the patterns presented by occupational groups of similar income levels. Since the purchasing power of starting chemists or lower earning groups is approaching that of the older or higher paid chemists, it is obvious that the annual increase in purchasing power for

SALARY TRENDS OF CHEMISTS

individual chemists is becoming less with the years. Deviations from the median by top and bottom decile salaries, in terms of percentage of the median, have also been diminishing. To the extent that comparable data are available, it appears that chemists' salaries followed the general earnings patterns for industrial groups. The percentage of the national income going to salaries and wages has increased somewhat between 1929 and 1947 and significant shifts have occurred in the distribution of the remaining national income.

Kushner to Bureau of Standards

Dr. Lawrence M. Kushner, A.A. I. C., is now working in fundamental research in the field of soaps and detergents, in the Chemistry Division, National Bureau of Standards, Washington, D.C. Dr. Kushner was recently awarded the Ph.D. degree in chemistry from Princeton University. In 1945 he received the student medal award of the New York Chapter, A.I.C.

The John Scott Award

At a meeting sponsored by the Delaware Section of the American Chemical Society on January 26, 1949, the John Scott award was presented to Morris S. Kharasch, professor of chemistry at the University of Chicago. After introductory remarks by Aubrey O. Bradley, chairman-elect of the Delaware Section, Dr. Royal J. Haskell of the U.S. Department of Agriculture spoke on "The Value of Alkyl Mercurials to American Agriculture." The purpose and history of the John Scott award was then described by John W. Iliff, secretary to the Advisory Committee of Board of Directors of City Trusts of Philadelphia, and the award was presented by Ernest T. Trigg, chairman of the Advisory Committee. Professor Kharasch gave an informative and entertaining account of his researches in this field. Among those attending to honor Professor Kharasch was John M. McIlvain, F.A. I.C., representing THE AMERICAN INSTITUTE OF CHEMISTS.

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Dr. Alexander Silverman, F.A. I.C., head, Department of Chemistry, University of Pittsburgh, will deliver an illustrated lecture on "The Past Decade in American Glass Manufacture" before the West Virginia Section of the American Ceramic Society April first, in Morgantown, West Virginia.

Calkin Appointed

John B. Calkin, F.A.I.C., has been appointed director of the Department of Industrial Cooperation, and associate professor of chemical engineering at the University of Maine, Dr. Arthur A. Hauck, president of the university announced recently. Professor Lyle Jenness, who has been acting director of the Department of Industrial Cooperation, will devote his full time to his duties as head of the department of chemical engineering.

From 1943-1948, Mr. Calkin was coordinator of research for the Union Bag and Paper Corporation. Recently, he established himself in New York as consultant to the pulp and paper and chemical process industries. He will continue to maintain offices at 500 Fifth Avenue, New York 18, New York.

Southern Machinery and Metals Exposition

The Fourth Southern Machinery and Metals Exposition will be held April 25th to 28th at the Municipal Auditorium, Atlanta, Georgia. Its theme is "Meet the Future," and exhibits will feature equipment, machinery, tools and products for textile mills, wood-working and lumber operations, metal working, and assembly and processing plants, in addition to other uses. Russel E. Bobbitt, Jr., is exposition president. Headquarters are at 267 E. Paces Ferry Road, N. E. Atlanta 5, Ga.

Lee in South Africa

Alan Porter Lee, F.A.I.C., consulting engineer in the glyceride industries, is at present in the Union of South Africa making a survey of edible oil mills and refineries for a client there.

Speakers at the joint meeting of the Chemical Markets Research Association and Polytechnic Institute of Brooklyn, in New York, N. Y., February tenth, included L. H. Flett, president A.I.C., chairman of the joint committee; Dr. W. J. Sparks, F.A.I.C., director of the Chemical Division of Standard Oil Development Company, on "Market Research Aids Experimental Research;" Dr. Walter J. Murphy, F.A.I.C., editor of *Chemical and Engineering News* on "Market Data in *Chemical and Engineering News*;" Dr. Raymond E. Kirk, F.A.I.C., dean of the Graduate School at Polytechnic Institute, chairman of the afternoon session; and Dr. Robert S. Aries, F.A.I.C., adjunct professor of chemical engineering, Polytechnic Institute, on "Break-even points and Chemical Industry."

Mary L. Alexander, F.A.I.C., of Universal Oil Products Company, Chicago, Illinois, was recently appointed editor of *The Chemical Bulletin*, publication of the Chicago Section of the American Chemical Society.

Starting a Chemical Specialty Business

H. Bennett, F.A.I.C.

President, Glyco Products Company, Brooklyn, N. Y.

(This is the second of a series of papers prepared by members of, and reviewed before publication by, the Member Advisory Committee, New York Chapter, A.I.C.)

MANY chemists have gone into business for themselves. Some have been successful, others have failed.

Starting a new business, either small or large, is a serious undertaking that will take time, money, and intelligent surveying and planning. The latter is the most important factor. If you were starting on a chemical research problem, you would first make a literature search. (A bibliography is given at the end of this article.) This should be part of your plan.

Just as you would discuss a research project with your group leader, technical director, and your development or sales executive, similarly you should discuss your proposed business project with all who may be in a position to give you information. For manufacturing a new product, conversations should be had with equipment, container, and raw material suppliers, distributors, dealers, and users. A lawyer, banker, and accountant should also be consulted. If indicated, an advertising agency

should be included in the survey.

The data obtained from the above search should be assembled and critically studied. Before making a final decision, discuss your findings with an experienced business man and a chemical executive. It is far better to err on the side of caution and delay, at this stage, than to assume that everything will work out all right. A business which is worthwhile starting today will usually be as worthwhile a few months hence.

No one individual is equally gifted in all directions. He may be an excellent chemist and a poor executive. Such an individual should consider teaming up with a man of executive caliber. Sharing profits two ways is better than standing all of the losses.

Successful businesses have been started in the depths of depression, during boom times, during every season of the year and in many different parts of our country. The same can be said for businesses that have failed. Thus there is no ideal time or place for a start.

The essential difference between

working as a chemist and being in business for yourself is that your scope and duties will no longer centralize around a laboratory bench. It will no longer be of a paramount importance that you are a very good organic chemist. It will be of prime significance that you can analyze a business problem and come to a clean-cut and logical conclusion in a minimum of time and then take the immediate necessary action. All your conclusions and actions will not be right. If your mistakes are chiefly minor, then your chances of success will be greater.

Your business problems will include, among others, purchasing, manufacturing, packaging, selling, financing, accounting, and legal matters. Since neither you nor anyone else can be an expert in all of these fields, recourse must be made to suitable sources of information and counsel. Time and money spent in this direction will often avoid costly mistakes if not complete failure.

Thus far we have spoken in general terms. To be specific, let us suppose that you have an idea for a general-purpose adhesive that seems to have some outstanding properties. It consists of a plastic copolymer, resin, plasticizer and solvent. The manufacturing process is one of simple agitation.

Various phases must now be considered before going into this business:

A. Marketing Survey

1. Evaluate its possible uses in
 - a. Industry.
 - b. Office
 - c. Home
2. Compare it with competitive products in
 - a. Price
 - b. Ease of use
 - c. Durability
 - d. Aging characteristics
3. Estimate volume that could be sold by *you*
 - a. Initial sales
 - b. Repeat sales
4. What type of sales effort will be needed
 - a. Salesman
 - b. Direct Mail
 - c. Advertising
 - d. Distributors
 - e. Dealers
5. Packaging
 - a. Bottle, tube or can
 - b. Cardboard container
 - c. Label and Use booklet
 - d. Display container
 - e. Protective shipping carton

The above marketing survey plan can be extended or shortened, but it is a "must."

B. Financing

The initial capital required for a business of this type may vary from a few hundred dollars to thousands. The first step is to project how much money will be necessary for all needs for a period of six months to a year. It is here assumed that this length

STARTING A CHEMICAL SPECIALTY BUSINESS

of time will be required before a fair profit will appear. Under no circumstances should you invest all of your money or that of your associates. If this business should fail, you will at least have half of your money left. Do not depend on promises of friends and relatives to lend you money as you need it. They may be sincere, but when the time of need comes they may not have funds available. Borrowing from banks or other outside sources should not be counted on. Bankers and business men, as a rule, do not lend or invest without security or *assured* good prospects. The time to get financing is before you start. Then, if it is refused, or promises for the future are made, you can decide whether or not to take the risk. Of course, a going business can get financing more easily, but we are concerned with a new business here.

C. Costing

An accurate estimation of costs is not possible until you have been in business for some time. An estimated cost can be projected from the costs of raw materials, yields, containers, labels, cartons, delivery charges, selling expense, overhead, your salary, etc. It is desirable to get an accountant to set up a costing plan here and a simple accounting system before the business is started. While your initial costs may be high because of small scale purchases, it is desirable to figure costs based on quantities to be used in actual commercial production.

D. Factory Space

You should preferably rent rather than buy a factory. Whether it is to be a loft or a building depends on many factors. Its location will be determined by rental (or cost,) distance from customers, raw materials, neighbors, etc. The floor plan should be such as to lend itself to efficient manufacturing, storage, and office operations. Light, ventilation, and low fire hazards are important. Facilities for incoming and outgoing shipments should be surveyed. The floor should be of proper construction for any heavy equipment and of such a nature as to facilitate cleaning and passage of trucks, etc. Extra ceiling height is useful where stacking of containers, etc., is intended. A ground floor is to be preferred to an upper floor. Yard space is useful for storage of drums or for sinking a solvent tank. If a sprinkler system is present, insurance rates are considerably lower. Check the kind of electricity available against the motors you will be using. If inflammable solvents are to be used, check against all inherent fire and explosion hazards. Have an attorney go over the lease for the premises to try to protect you against unseen pitfalls.

E. Equipment

Whether you buy new or used equipment, try to do business with a responsible dealer who can give you technical service. After you have determined the capacity and type of

equipment needed, lay your problem before the latter and get his recommendation. Then discuss this with other competent people. In planning an equipment layout, make cardboard scale models and place them in a scaled space equivalent to the factory you will occupy, showing columns, doors, windows, etc. Try to visualize all conditions as to loading, emptying, packaging, storing, and have others look at and criticize your plan. All changes require time and money. Better take extra time in this phase than later.

F. Containers and Packages

Suppliers of containers and packages have a wealth of information as to the best type for your purpose. Give them full information as to your requirements. Then they can give you sample containers, packages, and cartons. A good printer will help you design labels and use literature. Make up a few units and have them examined by salesmen, dealers, etc., for suggestions.

G. Raw Materials

Uniformity of raw materials is of prime importance. Sources of supply that will supply products according to fixed specifications should be found. Deliveries should be made when you want them or you will have to buy ahead to avoid a shutdown. Proper storing of raw materials to avoid deterioration due to heat, cold, light, etc., must be recognized. Legal restrictions on quantities and types of

inflammable solvents and methods of storage and handling must be ascertained.

H. Manufacturing

If process heating is needed, a source of steam is necessary. Whether the fuel is to be gas, oil, or coal (unless steam can be bought), what type of boiler is to be used requires careful study. Whether manual or mechanical controls are to be used on processing vessels is another problem. Proper safety provisions for guarding moving parts, protection from fire and explosion hazards, and good housekeeping (cleanliness) must be provided. All materials used must be measured or weighed and carefully checked to avoid spoiling products. Small batches should first be made on a pilot plant scale before going into commercial production. Control tests should be set up for checking all finished products.

I. Introducing a Product

One or all of the following methods may be used:

- a. Sampling
- b. Direct Mail
- c. Newspaper or Magazine Advertising
- d. Radio
- e. Demonstrations in Stores
- f. Displays in Stores
- g. Salesmen
- h. Distributors
- i. Exporters

Space does not permit further detail

STARTING A CHEMICAL SPECIALTY BUSINESS

on the above and other important factors. Such detail can be obtained from the references at the end of this article. All of the above may lead you to believe that starting a new

business is very hazardous. It is. So is a long-term research project. Yet some are successful. You, too, can be successful if you go about it in the right way.

References

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Johnson with Winchester

Melvin M. Johnson, Jr., inventor of the Johnson semi-automatic rifle, the Johnson light machine gun, and the Johnson automatic rifle, has been employed by the Winchester Repeating Arms Company, Division of Olin Industries, Inc., which has taken over all firearms patents of Johnson Automatics, Inc., of Boston, of which Mr. Johnson has been president and technical director since 1938.

Dr. Gustav Egloff, F.A.I.C., president of the Chicago Technical Societies Council, made the keynote speech at the opening of the three-day Chicago Area Career Conference, December 28th, held at Illinois Institute of Technology, and co-sponsored by the Technical Societies Council. Dr. Egloff addressed the high school and college students on educational requirements and job opportunities in the Chicago area.



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February Meeting

The 254th meeting of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS was held February 9, 1949, at The Chemists' Club, New York, N. Y. President Lawrence H. Flett presided. The following officers and councilors were pres-

ent: M. L. Crossley, L. H. Flett, K. M. Herstein, R. E. Kirk, H. W. Mackinney, C. P. Neidig, E. H. Northey, H. L. Pfluger, R. E. Rostenbach, F. D. Snell, L. Van Doren, J. R. Withrow, L. T. Work. V. F. Kimball was present.

President Flett reported that he

COUNCIL

had visited the Pennsylvania Chapter.

The Secretary reported that we now have 2,332 members. The death of Charles A. Marlies, Life member, on January 13, 1949, was recorded with regret.

The Treasurer's report was accepted. A comparative statement covering receipts and disbursements for the quarter ended January 31, 1949 and the corresponding quarter of the previous year was presented.

Plans were made to issue a new directory of members. It was suggested that a slip asking for information for this directory be sent out to each member at the time the bill for dues is mailed.

Dr. Snell reported as chairman of the Committee to Select Books for the Mattiello Memorial Library, and recommended the names of five books to be donated by the INSTITUTE.

President Flett presented a letter from Dr. Warren M. Sperry, F.A.I.C., which asked the INSTITUTE to appoint a representative in connection with the Committee on Clinical Chemistry of the American Chemical Society and the American Society of Biological Chemists; a national board for the certification of clinical chemists to be established after delegates from the participating societies have been appointed. Dr. Joseph W. E. Harrison, F.A.I.C., was appointed as delegate.

Karl Herstein reported concerning the activities of the New York Chap-

ter; Dr. Mackinney, for the New Jersey Chapter; Dr. Withrow, for the Ohio Chapter; Dr. Pfluger for the Pennsylvania Chapter, and Dr. Rostenbach for the Washington Chapter. (See Local Chapter News, page 109).

Dr. Rostenbach announced that the Voice of America, Department of State, would be interested in receiving information about the activities of the INSTITUTE.

President Flett reminded the councilors of the desirability of bringing in new members to the INSTITUTE.

President Flett appointed the following committee to make recommendations concerning the boundary lines between the Pennsylvania and New Jersey Chapters of the INSTITUTE: Mr. Neidig, Dr. Mackinney, and Dr. Kirk.

The following new members were elected:

FELLOWS

Abrahams, Morton

Attorney at Law, 30 South Broadway, Yonkers, New York.

Jacobs, Albert Lionel

Chemical and Metallurgical Patent Attorney, 60 East 42nd Street, New York 17, New York.

Killeffer, David Herbert

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MEMBERS**Dean, Robert Reed**

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*Assistant Control Chemist and
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pany, Bush and Severn Streets,
Baltimore 30, Md.

RAISED FROM ASSOCIATE TO MEMBER

Schaffrath, Robert Eben

Instructor of Chemistry, New
England College, Henniker, N.H.
There being no further business,
adjournment was taken.

Local Chapter News

C. P. Neidig, F.A.I.C.

Chicago Chapter

Chairman, Dr. J. A. Bjorksten
Vice Chairman, Dr. Herman S. Bloch
Secretary-Treasurer,

Miss Mary L. Alexander
Representative to National Council,
Dr. Charles L. Thomas
Reporter to The Chemist.

Miss Madge M. Spiegler

The Chicago Chapter turned out in large numbers, on the evening of December 10th, to hear Louis Koenig, F.A.I.C., of Armour Research Foundation and Tom Coffey, of Tom Coffey Employment Service. These two gentlemen provided an interesting evening for those attending—Dr. Koenig, with his comparisons on "Chemists, Doctors, Lawyers—And Money," and Mr. Coffey, giving us his views on, "The State of the Mar-

ket for Chemists." (See THE CHEMIST, February, 1949.)

As a part of their 1948-1949 meetings, the Chicago Chapter has arranged a series of discussions on the general subject of the economic status of the chemist. On February 11th, the second of this series of meetings was held with the theme, "What Can the Chemist Do to Help Himself." The speakers included Mrs. Luella Canterbury, specialist in psychological testing, whose title was, "Best Foot Forward," and Dr. M. T. Carpenter, executive director, Whiting Laboratories, Standard Oil Company (Indiana), who spoke on "Stepping Stones and Stumbling Blocks." Discussion followed both speakers and many of the forty-one members present brought out very interesting and thought-provoking points.

Los Angeles Chapter

Chairman, Manuel Tubis
Vice Chairman, Morris Katzman
Secretary, Romeo P. Allard
Treasurer, Wilfred Noble
Representative to National Council,
Dr. L. F. Pierce

Manuel Tubis, F.A.I.C., chairman of the Los Angeles Chapter, recently spoke before members of Psi Chapter of Phi Lambda Upsilon and the Student Affiliates of the American Chemical Society, at the University of Southern California. His topic was the professional concept of the chemist, with particular emphasis on the ethics of the profession. As a part of the discussion, Dr. N. Kharasch, member of the chemistry faculty, pointed out the many ways in which the university was advancing the professional status of the chemist. The reaction on the part of the students was very enthusiastic, and a lengthy discussion period followed the talks. The Los Angeles Chapter is expecting to continue this activity with the next stop at The California Institute of Technology.

New Jersey Chapter

Chairman, Dr. D. L. Cottle
Vice Chairman,
Dr. R. W. McLachlan
Secretary, Harry Burrell
Treasurer, John B. Rust
Representative to National Council,
Dr. H. W. Mackinney

The New Jersey Chapter met February 14th jointly with the North Jersey Section of the American Chemical Society, at the Public Service Auditorium, Newark, N. J. Professor L. F. Audrieth of the University of Illinois acted as coordinator of a symposium on the role of phosphorus in the development of improved insecticides, plastics, and other materials. Speakers were Dr. J. C. Pernert, director of research, Oldbury Electro Chemical Company, Niagara Falls, N.Y., on "The Acids of Phosphorus: Their Properties and Uses;" Dr. Howard Adler, director of research, Victor Chemical Works, Chicago, on "Phosphorus-Containing Polymers," and John S. Harris, Monsanto Chemical Company, St. Louis, on "The Neutral Phosphoric Esters." H. F. Wakefield, F.A.I.C., of the Bakelite Corporation, and chairman of the North Jersey Section, presided.

Prior to the meeting, at a dinner in the Newark Athletic Club, Dr. Walter J. Murphy, F.A.I.C., editor of *Chemical and Engineering News*, presented to Cameo Cosmetics of Newark the first Chemistry Products Award, recently established by the magazine to honor the nation's outstanding Junior Achievement Company in the chemical field. Philip Lippman, seventeen-year-old produc-

LOCAL CHAPTER NEWS

tion manager of Cameo Cosmetics accepted the award in behalf of his company. Certificates were conferred on the members of the winning group, which made a hand lotion called "Sheen." C. P. Gulick, president of Nopco Chemical Company, chairman of the Executive Committee, Essex West Hudson District Board of Directors of Junior Achievement, Inc., spoke on the work of this organization.

At the meeting in the Public Service Auditorium, Honorary membership in THE AMERICAN INSTITUTE OF CHEMISTS was presented to Dr. Moses Leverock Crossley, by A.I.C. President Flett. (See pages 83-86.)

New York Chapter

Chairman, Dr. Martin Meyer

Vice Chairman, Dr. Lincoln T. Work

Secretary-Treasurer, Dr. M. J. Kelley

Representative to National Council
Karl M. Herstein

Public Relations, G. A. Kirton

A meeting of the New York Chapter will be held Thursday, March 24th, at 8:00 p.m., at the Hotel George Washington, 23 Lexington Avenue, New York, N. Y., where a panel discussion will be featured, on "How Good is Your Company?" Speakers will be Dr. Howard Nechamkin of Pratt Institute, Brooklyn,

N. Y., and Herbert Silverman, of the Materials Laboratory, Bureau of Ships, New York Naval Shipyard.

The Nominating Committee will propose the following names for the offices to be filled by the election at the May 18, 1949, meeting: *Chairman*, Dr. Martin Meyer; *vice chairman*, Dr. Lincoln T. Work; *Secretary treasurer*, Dr. Maurice J. Kelley; *Representative to the National Council*, Karl M. Herstein; *Councillors* (two to be elected), Dr. W. J. Baeza, Dr. Francis H. Bebee, Dr. Clarence Bremer, Dr. Robert Ginell, and Guy A. Kirton. Additional nominations may be made from the floor.

For those who wish it, the hotel serves dinner in The Pine Room at 6:00 p.m., from \$1.25.

The membership committee headed by L. Koberlein, F.A.I.C., reports approximately forty new members during the current fiscal year. A special effort is being made to have these new members present at the March 24th meeting.

A very active Member Advisory Committee has been formed under the chairmanship of Harry Bennett, F.A.I.C., This group is offering advice to chemists on professional, business, and employment problems. A series of articles sponsored by this committee is appearing in THE CHEMIST, (see page 101).

Pennsylvania Chapter

Chairman, Helmuth L. Pfluger

*Vice Chairman, Hillary Robinette,
Jr.*

Secretary-Treasurer, John H. Staub

*Representative to National Council,
Charles W. Rivise*

On February third, the Pennsylvania Chapter had the pleasure of having as its guest speaker, Lawrence H. Flett, president, A.I.C. The largest attendance of the year heard his formal remarks on the subject, "The Future of Synthetic Detergents." In a brief, impromptu talk following the dinner, Mr. Flett brought the Chapter up to date with recent accomplishments of the INSTITUTE as well as an insight into future plans.

A meeting is scheduled to be held April 7th at 8 p.m. at the Engineers Club, 1317 Spruce Street, Philadelphia. Dr. Richard Wilhelm, professor of chemical engineering at Princeton University, will address the group on "Catalytic Reactors." The meeting will be preceded by a dinner at 6:30 p. m.

Washington Chapter Meeting

The Washington Chapter will meet March 16th at 8:00 p.m. at the Gardner Laboratory, Inc., 4723 Elm Street, Bethesda, Maryland, where Dr. Richard S. Hunter will speak on the "Manufacture and Application of Apparatus for Appearance Measurement." An inspection tour of the laboratories will follow the meeting.

Chemist Available

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Chemist Available

Physical-organic Chemist, Ph. D. equivalent. Polymers, Mechanical Properties, Rheology. Six years varied experience. Production supervision organics, resins, chlorinations, detergents. Group Leader Manhattan Project, instrumentation, trace analysis, physical methods, high vacua, mass spectrometer, isotopes. Consultant, good administrator. Honor Societies, publications, patents. Age 28, married, dependents. Please reply to Box 32, The Chemist.

Jet Propulsion Fellowships

Six \$2,000 Jet Propulsion Fellowships are being offered by the Daniel and Florence Guggenheim Foundation to qualified applicants who desire advanced professional training in this field. Three of these are for two-years of postgraduate study at Princeton University and the other three, at California Institute of Technology. Application forms may be obtained from the Daniel and Florence Guggenheim Foundation, 120 Broadway, New York 25, New York.

Condensates

Ed. F. Degering, F.A.I.C.

Public Relations School for Engineers?

And why not; the modern science and art of influencing public opinion makes it a requisite. Consider the quality and status of the men who are America's engineers. . . Assuredly they are more deserving of credit for tremendous contributions to the welfare of every individual. Someone is guilty of hiding the engineer's personal contributions, or of generalizing them before they become public information. Perhaps the press has been lax in recognizing America's chemical, civil, electrical, and industrial engineers as personalities, not machines. Perhaps the professional

societies have failed to make a proper approach to public understanding.

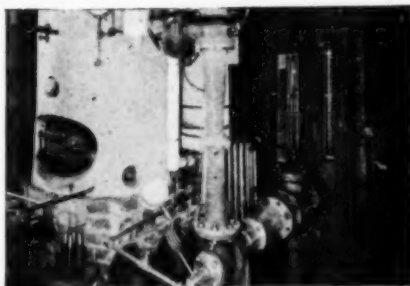
Whatever the cause of this almost premeditated neglect, fundamental accomplishments of the nation's engineers should not remain wreathed in generalities.

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